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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Jari Hamalainen et al.
SERIAL NO.: 09/255,325 ART UNIT: 2739
FILED: 2/23/99 EXAMINER: C. Lee
REISSUE OF U.S. PAT. NO.: 5,640,395 ISSUED: 6/17/97
TITLE: System For Transmitting Packet Data In Digital Cellular Time Division Multiple Access (TDMA) Air Interface
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Assistant Commissioner for Patents
Washington, D.C. 20231

SUPPLEMENTAL REMARKS

Sir:

It was believed that the Examiner, in discussing this Application with the undersigned on September 22, 2000, referred to Shepherd et al., col. 2, lines 19-21 and col., 3, line 20. It is thought that the Examiner may have referred to, or meant to refer to, col. 2, line 19 to col. 3, line 20 of Shepherd et al.

This portion of Shepherd et al., explains (col. 2, lines 31-48) that in the prior art "padding" is used when data transaction is asymmetric, and the solution is (col. 2, line 67- col. 3, line 3) that "a time slot not being used for the transmission of useful data will be released and made available for other unidirectional signaling". Further in col. 3, lines 6-10,

Shepherd et al. states "that if the underused or non-used time slots in the or each duplex voice channel can be made available for other unidirectional signaling then a more efficient usage of the allocated duplex voice channels will be possible".

It is respectfully requested that the Examiner please note above all the underlined sections. Clearly, there is an uncertainty as to whether an underused or non-used time slot can be utilized for other unidirectional signaling. Thus, in the solution of Shepherd et al., at least occasionally, time slots are reserved unnecessarily so that they are underused or not used at all. This is a waste of resources. The waste of resources is due to the fact that in Shepherd the allocated channels always have an equal number of time slots in the uplink and downlink. Thus, in Shepherd an equal number of time slots in the uplink and downlink channel is always reserved. In Shepherd, it is not possible to reserve and unequal number of time slots in the uplink and downlink channel. In the present invention, the latter is possible, as can be seen from the wording in the claims:

Claims 39, 41 and 43 recite "each uplink logical channel having a variable number of uplink time slots and each downlink logical channel having a variable number of downlink time slots, the number of allocated time slots in each logical channel being a function of one of a symmetricity and an asymmetricity of the packet data transmission".

Further, Claims 58, 60 and 62 recite:

"each uplink logical channel having a variable number of uplink time slots and each downlink logical channel having a variable number of downlink time slots, the respective number of allocated uplink time slots in an uplink logical channel and downlink time slots in a downlink logical channel being one of an equal number and an unequal number, in dependence upon the demand for packet data transmission in the uplink direction and respectively upon the demand for packet data transmission in the downlink direction".

While the difference may appear subtle, there is actually a very significant difference in these claims from the teachings of Shepherd et al. Simply stated, Shepherd et al. clearly fails to teach the above underlined features. This difference is of great significance in practice. Shepherd et al. aimed at a more efficient usage of the duplex voice channels, having noted the problems of the prior art, but completely missed the solution set forth in claims 39, 41, 43, 59, 60 and 62. The present invention provides a solution that is even more efficient, since it makes the allocation of time slots fully dynamic in that at the very beginning, only the number of time slots that are needed in each direction (uplink or downlink) are allocated (for example one time slot in the uplink direction and three time slots in the downlink direction). Thus, in accordance with the present invention, there is no need to release time slots and seek other usage to avoid underutilizing an allocated time slot, as is the case in Shepherd, but instead, in accordance with the present invention, only that exact number of time slots that is needed in each direction is allocated. The other time slots in the

TDMA frame thus remain free for allocating to another mobile station.

Thus, claims 39, 41 and 43 as well as claims 58, 60 and 62 do not read on Shepherd et al. and are not rendered obvious by Shepherd et al.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application (including claims 68-73, which further patentably distinguish Applicants' invention) are clearly novel and patentable over the prior art of record. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issue remain, the Examiner is invited to call Applicant's Attorney at the telephone number indicated below.

Respectfully submitted,

NOVEMBER 29, 2000

David Aker (Reg. No. 29,277) Date

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